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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/757,847

01/16/2004

Masahiko Arai

62807-156

5086

7590 04/12/2007  
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EXAMINER

YEE, DEBORAH

ART UNIT

PAPER NUMBER

1742

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

04/12/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/757,847

Applicant(s)

ARAI ET AL.

Examiner

Deborah Yee

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3,8 and 10-14 is/are pending in the application.
- 4a) Of the above claim(s) 10-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3 and 8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>1-25-07</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Claims 10 to 14 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 9-15-06.

### ***Claim Objections***

2. Claim 1 is objected to because of the following informalities: There is a typo-error on line 2 wherein the lower limit of the Mn range of "0.5" should be -0.05---. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3 and 8 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese patent 57-207161 (Fukazawa) alone or in view of Table 1.1 in the Introduction to Steels and Cast irons publication for the reasons set forth in the previous office action dated 11-01-06.

Art Unit: 1742

5. Claims 1, 3 and 8 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese patent 58-217661 in view of Japanese patents 57-207161 or Japanese patent 7-70713 for the reasons set forth in the previous office action dated 11-01-06 and further in view of Table 1.1 in the Introduction to Steels and Cast irons publication.

***Response to Arguments***

6. Applicant's arguments filed 02-01-2007 have been fully considered but they are not persuasive.

7. In regard to the 103 rejection base on Japanese patent 357207161 (Fukazawa), it was argued that prior art does not teach an alloy useful to make turbine components as asserted by the Examiner. It is the Examiner's position that Fukazawa teaches a steel having heat resistant properties with superior high temperature creep strength, which would be conducive for turbine component application and are also essentially the same properties desired and sought by applicant's present invention.

8. Applicant stated that Fukazawa does not disclose or suggest the recited limitations of claim 1 wherein the value of  $(\text{Ni-Cu})^2$  does not exceed 1.8 and  $\text{Mo}/(\text{Mo}+0.5\text{W})$  is not less than 0.75. It is the Examiner's position that Fukazawa example 1 in table 1 on page 347 closely meets the composition and when calculated, has a the square value of (Ni-Co) equal to 0.0016 ( within the claimed range of not more than 1.8), and  $\text{Mo}/(\text{Mo}+0.5\text{W})$  equal to 0.678 (closely approximates the claimed range of 0.75 or higher). Since applicant has not demonstrated criticality for the Mo equation (e.g. by comparative test data), then it would seem a composition with a Mo

Art Unit: 1742

equation value of 0.75 vs. a composition with a slightly lower value (say 0.678) would depict a mere difference in the proportion of elements without any attendant unexpected results which would not patentably distinguish claims over prior art. Note that applicant's specification and original claim discloses a value of 0.5 or higher is permissible.

9. Moreover, even though prior art does not teach the claimed equations, such would not be a patentable difference since it has been held that there is no invention involved in the discovery of a general formula if it covers a composition described in the prior art.

8. In regard to the 103 rejection based on Japanese patent 58-217661 (Usuda ), it was argued that prior art does not disclose or suggest the recited limitations of claim 1 wherein the value of  $(\text{Ni-Cu})^2$  does not exceed 1.8 and  $\text{Mo}/(\text{Mo}+0.5\text{W})$  is not less than 0.75. It is the Examiner's position that Usuda example 4 in Table 1 on page 333 closely meets the composition and when calculated, has a the square value of (Ni-Co) equal to 0.144 (within the claimed range of not more than 1.8), and  $\text{Mo}/(\text{Mo}+0.5\text{W})$  equal to 0.86 (within the claimed range of not less than 0.75).

9. Moreover, even though prior art does not teach the claimed equations, such would not be a patentable difference since it has been held that there is no invention involved in the discovery of a general formula if it covers a composition described in the prior art.

10. Applicant further submitted that Usuda does not teach or suggest an alloy composition containing Mn and B or Re as recited by one or more of the claims. It is

Art Unit: 1742

the Examiner's position that adding small amounts of Mn to analogous heat resistant steel alloys to deoxidize and enhance toughness is a conventional and well known practice as evident by last 3 lines on page 1 of the computer-generated English translation of JP7-70713. Moreover, Table 1.1 of Introduction to Steels and Cast Irons publication teaches that it is conventional and well known in the art that by adding small amounts of B to steel, hardenability is enhanced, and by adding small amounts of rare earth element, deoxidization occurs. Since deoxidizing, hardenability and toughness are desired and sought for the Usuda steel, then it would be an obvious modification well within the skill of the artisan incorporate small amounts of Mn and B or Re to produce no more than the known and expected effect from such additions. In any event, the differences between prior art and present invention amount to no more than routine optimization of alloying constituents to achieve the desired balancing of properties which is well within the skill of the artisan and productive of new and unexpected results.

### ***Conclusion***

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any


Art Unit: 1742

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah Yee whose telephone number is 571-27211253. The examiner can normally be reached on monday-friday 6:00am-2:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Deborah Yee  
Primary Examiner  
Art Unit 1742

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